From glowbugs@theporch.com Fri Oct 4 15:54:52 1996
Return-Path: <glowbugs@theporch.com>
Received: from uro (localhost.theporch.com [127.0.0.1]) by uro.theporch.com
(8.8.0/AUX-3.1.1) with SMTP id PAA07742; Fri, 4 Oct 1996 15:50:33 -0500 (CDT)
Date: Fri, 4 Oct 1996 15:50:33 -0500 (CDT)
Message-Id: <199610042050.PAA07742@uro.theporch.com>
Errors-To: conard@tntech.campus.mci.net
Reply-To: glowbugs@theporch.com
Originator: glowbugs@theporch.com
Sender: glowbugs@theporch.com
Precedence: bulk
From: glowbugs@theporch.com
To: Multiple recipients of list <glowbugs@theporch.com>
Subject: GLOWBUGS digest 312
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas
X-Comment: Please send list server requests to listproc@theporch.com
Status: O

GLOWBUGS Digest 312

Topics covered in this issue include:

1) Re: 6L6 special
   by "Brian Carling" <bry@mail1.mnsinc.com>
2) Re: 6L6 special
   by "Claton Cadmus" <aplitech@Spacestar.Net>
3) novice xmtr parts needed
   by wj5j@juno.com (John D Hensley)
4) tube pinouts
   by "Brian Carling" <bry@mail1.mnsinc.com>
5) Re: novice xmtr parts needed
   by "Brian Carling" <bry@mail1.mnsinc.com>
6) Re: 6L6 special
   by Bruce Robertson <brucerob@chass.utoronto.ca>
7) VE3UWL's QRP Bibliography on the WWW
   by "James P. Rybak" <jrybak@mesa5.Mesa.Colorado.EDU>
8) Need basic info on transformers
   by Art Winterbauer <art@comet.ucar.edu>
9) Re: Temperature Control and Thermal Drifts
   by rdkeys@csemail.cropsci.ncsu.edu
10) BA/GB Weekend Frolicks
   by rdkeys@csemail.cropsci.ncsu.edu
11) crystals
   by Richard Wilkerson <richqrp@pacbell.net>
12) Re: Temperature Control and Thermal Drifts
   by Roy Morgan <morgan@speckle.ncsl.nist.gov>
13) Re: Need basic info on transformers
   by mjsilva@ix.netcom.com (michael silva)

 14) Re: crystals
     by rdkeys@csemail.cropsci.ncsu.edu
 15) Re: Temperature Control and Thermal Drifts
     by clarke@next3.acme.ist.ucf.edu (Thomas Clarke)

Date: Thu, 3 Oct 1996 14:19:36 +0000
From: "Brian Carling" <bry@mail1.mnsinc.com>
To: glowbugs@theporch.com
Subject: Re: 6L6 special
Message-ID: <199610032118.RAA18850@user2.mnsinc.com>

Man, I would SURE like to see THAT sechematic!

Bry

> Can someone tell me the issue of 73 magazine in which the "6L6 Special"
> by Michael Bryce, WB8VGE, appeared?
>
> Thanks and 73.......Steve, WB6TNL
>
>
Brian Carling in Gaithersburg, Maryland, USA
bry@mnsinc.com
http://www.mnsinc.com/bry/

Date: Thu, 3 Oct 1996 16:31:50 -0500
From: "Claton Cadmus" <aplitech@Spacestar.Net>
To: "Glowbugs" <glowbugs@theporch.com>
Subject: Re: 6L6 special
Message-ID: <199610032133.QAA22415@Spacestar.Net>

> From: Stephen M Smith <sigcom@juno.com>
> To: Multiple recipients of list <glowbugs@theporch.com>
> Subject: 6L6 special
> Date: Thursday, October 03, 1996 3:02 AM
>
> Can someone tell me the issue of 73 magazine in which the "6L6 Special"
> by Michael Bryce, WB8VGE, appeared?

Ditto & Thanks

Claton Cadmus |73 de KA0GKC
Application Technologies Inc. |ARRL, QRP-ARCI, NorCal
Ph. (612)926-8886 |ARCC, MNQRP&HB Society
Fax (612)926-8545 |ka0gkc@ka0gkc.ampr.org
E-mail cla@spacestar.net |ka0gkc@wb0gdb.#stp.mn.us

Date: Thu, 3 Oct 1996 22:06:01 PST
From: wj5j@juno.com (John D Hensley)
To: glowbugs@theporch.com
Subject: novice xmtr parts needed
Message-ID: <19961003.221932.4791.12.wj5j@juno.com>

Good evening group,

has anyone an 8 milliampere meter (clear plastic Heath squarish)
to spare? Just aquired an old Heath novice xmtr and the front
panel meter was uncovered and then damaged.

Also need a 6146 plate cap, a 6146 pull, and an AC plug which
uses 1/4" fuses.

Thanks in advance,

Doug

********** WJ5J / NNN0BXX **********
WTF: National AN/WRR-2A or FRR-19 or R274x(SX-73)
51J4 parts Wanted: mech filters, mech filter switch and
assembly mechanism, small knobs, if slug assemblies,
covers, etc. Also need National HRO rack speaker and
NBFM module and rack coil holder for HRO 50/60R
********** wj5j @ juno.com **********

Date: Fri, 4 Oct 1996 03:56:25 +0000
From: "Brian Carling" <bry@mail1.mnsinc.com>
To: boatanchors@theporch.com
Subject: tube pinouts
Message-ID: <199610041055.GAA00961@user2.mnsinc.com>

Does anyone know if there is a place on the WWW, either a Web Site or
FTP location, that has listings of VALVE/TUBE base PIN-OUTS?

Makes me wish I hadn't tossed all those GE, RCA, EIMAC books etc.
years ago!
Brian Carling in Gaithersburg, Maryland, USA
bry@mnsinc.com
http://www.mnsinc.com/bry/

Date: Fri, 4 Oct 1996 03:59:29 +0000
From: "Brian Carling" <bry@mail1.mnsinc.com>
To: glowbugs@theporch.com
Subject: Re: novice xmtr parts needed
Message-ID: <199610041058.GAA01048@user2.mnsinc.com>

Hello - I thiink I MAY have a 6146 - let me check my tube box this
weekend and let you know.
The meter is not going to be easy unless you can find a junker, PARTS
RIG from soneone. WHICH model of Griefkit is it for?
Could you substitute a 10 mA movement of some other kind?

"Seventy-toob de AF4K"
Brian Carling in Gaithersburg, Maryland, USA
bry@mnsinc.com
http://www.mnsinc.com/bry/

Date: Fri, 4 Oct 1996 09:04:23 -0400 (EDT)
From: Bruce Robertson <brucerob@chass.utoronto.ca>
To: Stephen M Smith <sigcom@juno.com>
Subject: Re: 6L6 special
Message-ID: <Pine.SGI.3.91.961004090301.29002D-100000@chass.utoronto.ca>

On Thu, 3 Oct 1996, Stephen M Smith wrote:

> Can someone tell me the issue of 73 magazine in which the "6L6 Special"
> by Michael Bryce, WB8VGE, appeared?
>

Once again, this and many other references from the glowbugs list over
the past year or so may be found on the Glowbugs Bibliography:

<http://www.epas.utoronto.ca:8080/~brucerob/glowbugs/glowbugs_bib.html>

Enjoy,

Bruce G. Robertson Dept. of Classics, U. of T.

Date: Fri, 4 Oct 1996 08:26:11 -0600 (MDT)
From: "James P. Rybak" <jrybak@mesa5.Mesa.Colorado.EDU>
To: Glowbugs <glowbugs@theporch.com>
Subject: VE3UWL's QRP Bibliography on the WWW
Message-ID: <Pine.SV4.3.91.961004082346.10354A-100000@mesa5.mesa.colorado.edu>

Bruce is to be commended for his fine QRP bibliography on the WWW. It really is most helpful.

Jim Rybak W0KSD

Date: Fri, 4 Oct 1996 08:28:37 -0600 (MDT)
From: Art Winterbauer <art@comet.ucar.edu>
To: glowbugs@theporch.com
Subject: Need basic info on transformers
Message-ID: <Pine.SUN.3.95.961004082417.19123E-100000@spike>

"Standard" color coding for primary, secondaries, taps, etc. and methods of determining the same for transformers without color coded wires. Does anyone know of an in-print information source?

Art, WA5OES

Date: Fri, 4 Oct 1996 11:38:05 -0400 (EDT)
From: rdkeys@csemail.cropsci.ncsu.edu
To: ornitz@eastman.com
Cc: rdkeys@csemail.cropsci.ncsu.edu (), glowbugs@theporch.com
Subject: Re: Temperature Control and Thermal Drifts
Message-ID: <9610041538.AA103493@csemail.cropsci.ncsu.edu>

Barry and I are in a slight state of academic disagreement on the heating the vfo topic. Because I have seen it work in several instances, I will reply to it and hopefully generate some practical discussion and resolution.

(Actually, in the end, it seems we pretty much agree).

>
> Bob,
>
> I think I am going to have to disagree with you about thermal drifting and
> temperature control. This goes back to _my_ vintage days as a chemical
> engineer with heat transfer and automatic control theory. You said:

No problem, Barry. I will use 4 areas of support for my claims, two
of which are BA vfo instances from commercial houses, and two from
my work here in the laboratory using such principles in the practical
development of heating systems for things like gas chromatographs and
seed germination temperature gradient plates.

> >> Also, do you think a tiny cooling fan is appropriate for use on a VFO
> >> for thermal stability?
>
> Actually in a temperature controlled environment, like my house with a
> heat pump running all year, a fan will improve the long-term temperature
> stability of a VFO. My house drifts slowly in temperature by a few
> degrees. If the fan is adequate to keep the VFO components at room
> temperature, drift will be minimized. Short term drift may be slightly
> hindered.

I prefer not to use fans around VFO's because they tend to cause unstable
air currents of widely varying temperatures around my shack. In all the
vfo's I have seen in BA gear going back to the first tube gear of the
early 20's, I have yet to see a cooling fan in any VFO compartment except
one --- that of the TBK transmitter, which used a HUGE tube (860 running
about 75 watts) as the vfo. The heat load from that tube was somewhere
around 1000v@150ma + 10v@5-10a or about 100-200 watts after driving
power was removed by the subsequent stage. In a sealed box, it had
to have cooling, so a blower was fitted. Everything else that I have
ever seen, using 50 watt tubes or smaller as oscillator tubes has not
used any sort of fan cooling. Most use ambient air dissipation through
the case. A few, high quality vfos, use controlled heating to maintain
the vfo at a higher temperature than ambient (usually in the neighborhood
of 60C). Examples of this are the Technical Material Corporation's line
of oscillators from the 60's, and the rtty oscillator used by the BC-610
from late WWII through the Korean era. These used double wall insulated
construction with heaters to maintain the vfo sufficiently above ambient
that that stability could be obtained regardless of ambient temperature
fluxes. In the case of these two oscillators, variations in room
temperature have essentially no effect, because the outgoing heat flow
from the vfo box swamps any room variations, and because the thermostats
in the vfo boxes are relatively precise controls (of the order of +- 1
or 2 C), and because the boxes have a high inherent thermal mass.

>
> > Nope. Use a small heat source to add sufficient heat to the unit to
> > overcome differential losses due to ambient drift properties.
> > That is why xtals have ovens and military vfo's are often built with
> > heating ovens around the VFO part.
>
> What is needed is temperature control, not just heat. I have never seen a
> crystal oven or military VFO with a heater that did not have a thermostat
> to control the temperature. In crystals, the elevated temperature damages
> them and causes them to drift - slowly. However their short term
> stability is greatly improved since a temperature is chosen such that the
> crystal operates at a point where the temperature coefficient of frequency
> is ideally zero.

True, temperature control is needed, and normally thermostats are used in
commercial/military applications in heated vfo's and xtal cans. But,
it is relatively simple to mimic that, from the practical point of view,
which would work very well in a simple heated vfo application, in a manner
similar to what I will describe in two systems that I have used/developed
here in my lab.   The first application is a precisely heated oven for
a somewhat specialized gas chromatograph, put together on a peanut whistle
budget. The second application is a precisely heated temperature gradient
plate for seed germination work, but which will apply in many respects to
vfo construction.

> > It really does not require much
> > heat, but it does require a constant heat and a constant heat flow
> > out of the VFO into the surrounding environment, such that any local
> > changes in the environment are swamped by the outgoing heat from the
> > vfo and thus effectively negated.   In my RMCA rig that heating
> > element was a small wound nichrome strip that ran off the filament
> > voltage and added a couple of watts of heat to the vfo compartment.
>
> Constant heat ONLY works if the environment's temperature does not change.
> If it does, the heat loss of the VFO will change and its temperature will
> change. What you really need is a constant temperature for the frequency
> determining components. If the VFO temperature is very high, room
> temperature variations may have less of an effect. If the heat added
> deliberately is far greater than the heat generated by operating the VFO,
> running the VFO won't cause much temperature change. Of course this
> usually means that with a giant heater in the VFO, it will heat so fast
> that warmup time is minimized - but the VFO will still be sensitive to
> room temperature variations, and drift like crazy until its temperature
> does stabilize.

I will have to differ with you here, to a practical extent, and invoke
the practical application of thermal mass to the equation. If one builds

a box with little thermal mass, then ambient temperature fluctuations will have a great effect on the internal temperature of the box. Heat will flow in or out of the box depending upon the external temperature changes. One can compensate for this by heating the box, but it will take a lot of heat to swamp out the external temperature changes to a negligible value. On the other hand, if one builds a relatively tight box with a large thermal mass, then that effect is practically negated and the changes with time are smoothed out to very slow drifts. Now, if one then adds sufficient heat to the system to overcome the longterm drifts, one has a stable system, to all practical intents and purposes.

How can one do this? Rather simply actually. Case in point no. 1. About 20 years ago, I needed a very simple gas chromatograph to separate and quantify ethylene gas, emanted from plants. I had an old piece of a gas chromatograph that came from the junk pile, but no oven system to make it work. After some head scratching, I took an old hardboard asbestos oven from the 1930's, stripped the broken heating system out of it and installed a light bulb (25 watt if I remember correctly) and a variac, wrapped the 20 feet or so of column around a soda bottle, to form a coil about 6 inches in diameter, and placed the coil over the light bulb so it was in the center of the coil. The detector block was self heated, electrically and was put on a separate variac. The injector block was done similarly. When all was closed up, the 25 watt bulb was sufficient to raise the column temperature to about 70C in the oven. A 60 watt bulb would run it up to 110C. Short term or long term stability was entirely adequate enough to maintain the column temperature sufficiently close, regardless of room air temperature excursions in a 1950's building with lousy air conditioning, to do good scientific analytical work. I built a second one of these using another junk gas chromatograph, with a broken oven, by merely taking the electronics and injector/detector assemblies and mounting them on a 1 cubic foot box oven made of nothing more sophisticated than 1/4 inch aluminum plate. It worked equally well for the detection and quantification of carbon dioxide gas. It used a similar 60 watt bulb hooked up to a variac. The reason it worked was that there was a) enough thermal mass to not change temperature during room excursions and b) enough heat added by the light bulb to keep a relatively constant outgoing heat flow from the system. No fancy insulated oven system was required, just the 1/4 inch aluminum box. Granted the temperatures that can be reached by light bulb heat source are not very high, but the are within the range of what is required for a heated vfo box to operate effectively.

Case no. 2. I needed a temperature gradient plate in the lab for germinating seeds at various temperatures, statically, or using a diurnal temperaure flux superimposed upon a temperature gradient. For this system I used controlled water baths to give a circulating temperature cooling heating system, but use 1 inch aluminum plate as the thermal mass and 4 inch square aluminum blocks. The thermal mass of the system is so big, that short

term room excursions have no discernable effect on the system. It only depends upon the heat flow from the hot to the cold end of the 2x4 foot plate.

Both of the above cases plus the way the commercial/military vfo's were constucted have made a strong suggestion to me that the simple light bulb trick will work eminently well as a vfo temperature controlling system. It may take a few hours to come up to temperature the first time, but once there, the system is quite stable, in my hands in the lab.

> > For simplicity, use a small xmas tree lamp in a small ceramic socket.
> > Even a 12 volt auto dome lamp running off a 6 volt filament will work.
> > Even a 50 watt resistor that can dissipate about 2-5 watts running from
> > the filament string will work nicely (for a 6 volt heater string you
> > want about a half amp heating current through the resistor to give
> > 3 watts of heat --- thus the resistor should be about 12-15 ohms rated
> > at 50 watts or more). The resistor or heat source is powered from the
> > line through a small filament transformer and run continuously, even
> > when normal tube power is off.
>
> Actually, the ideal case would be for the heater to run only when the VFO
> is turned off but to produce the same heat as the VFO components when the
> VFO is turned on. Wiring the heater across the AC line switch usually
> accomplishes this.

That might be an interesting thing to try, but I prefer to keep the box on the vfo warm, all the time and put the tube external to the box. That is how the military and commercial oven vfo's work. That only adds about 1 to 2 inches of lead length through some ceramic feedthroughs and keeps the tube heating contribution out of the vfo heat system.

My suggestion of the heater resistor is based upon what Radiomarine Corp. did in their marine gear to 1) assist in humidity control, and 2) assist in vfo stability. They used a resistor that dissipated about half an amp through a 15 volt drop to generate sufficient heat to stabilize the receivers under all conditions found at sea. That is about the same as a 7.5 watt light bulb. If it worked in receivers, it should work in vfo's.

> > It is important that you put good insulation around the vfo coil box,
> > although you don't want it so good that excessive heat builds up.
> > You do want it sufficient to leak out the heat and cause an outgoing
> > heat flow that is about 10 times the thermal heat load drift caused
> > by ambient temperature excursions. Ideally, a double coil box with
> > a wood sandwich lining or a fiberglass sandwich lining is best.
> > You don't need to go to exotic linings like asbestos board (bad stuff)
> > or ceramics. You should not use household foam which can melt or burn.

> > Even air as a sandwich about 1 inch in thickness if it is not moving
> > will make a good thermal insulator.
>
> Actually this is an entirely different issue. You have to run at a
> temperature above ambient for the heat loss to be outward. You could use
> a pyroelectric cooler and run the VFO below ambient and let the heat loss
> be inward. You want good thermal insulation to minimize the heater load
> and to provide a very long thermal time constant. Massive blocks of metal
> in the VFO will also provide a long thermal time constant. The combined
> effect of the insulation and the thermal "capacitance" is a low pass
> filter for external temperature variations. At the same time, the added
> mass creates added mechanical stability too.

Theoretically it does not matter which way the heat flow goes, but I
would expect it to be easier for us glowbugging types to find a heat source
such as a small lamp or resistor rather than a refrigeration system such
as a Peltier effect plate or the like.

Now we actually are agreeing on the heat load and thermal mass concepts.

> One problem in designing temperature control systems is that you can put
> heat into your system far faster than thermal losses can remove it. This
> is the reason for excessive overshoot in most thermostatically controlled
> systems when first turned on. If you want tighter temperature control,
> deliberate heat leaks are often added.

Temperature control is expensive, and not necessarily a trivial concern.
Good control systems from commercial houses run 20-100 bucks for thermostat
type controllers, and lots more for electronic controllers. That is why
I was suggesting the simple heat lamp or heat resistor approach.
Also, you can find the parts anywhere.

Commercial temperature controllers for heating systems, etc, run about
40-150 dollars in my Grainger catalogue. Heating elements are about
20 dollars minimally for cartridge or bolt-on heaters. I will still
take a simple 4-15 watt lamp and make it work, at those prices, unless
I find something in surplus.

> Temperature CONTROL is relatively trivial with moder solid-state stuff.
> That TS-323 I got at Shelby will probably get active temperature control
> with a proportional (rather than on-off) heater system.

Yes, something like an SCR controller might work, and those are not that
expensive, albeit they can generate horrendous noize if I am remembering
correctly --- bad bad bad around regen receivers.....(:+{{......

I don't know that we need that tight a temperature control, but it should
be feasible. I am expecting that thermal mass ``capacitance'' as you all

it below is more important to a well functioning stable vfo temperature system.

> If there is one area where boatanchor technology is _seriously_ lacking,
> it is in thermal considerations. Modern design with miniaturization
> REQUIRES that thermal design must be done along side of electrical design.
> I think only Collins considered thermal design and then only after they
> went solid-state, although the Drake rigs are certainly well ventilated
> (but they have a few serious thermal oversights too like putting a big 10
> watt resistor directly under the PTO in some chassis).

Well, there have been good designs used in commercial vfos like the Technical Material stuff or that vfo used for rtty with the BC-610. Most ham stuff though does not even consider it. Although it is probably not of major concern to us glowbugging types, it does need to have some thought, if we are going to make a really high quality stable vfo.

> In a VFO, EVERYTHING is temperature sensitive. Not only do the components
> drift with temperature directly, but everything also changes dimensions
> with temperature. Imagine what this does with coil forms and variable
> capacitor frames. Temperature compensating capacitors only work if the
> capacitor sees the same thermal surroundings as the other VFO components.
> In the long run, controlling the temperature starts to look very
> attractive.

Yes, everything is temperature sensitive. But, depending upon the oscillator design, effects of temperature can be minimized in many ways. The choice of oscillator will affect stability. A Hi-C circuit will tend to be more stable in the short term, but may drift a little more in the long term, for example. Putting the tube heating outside the coil box will help to stabilize things. Remoting the vfo tuning box was common in the 50's and 60's in ham construction articles. The Clapp oscillator works well in the remoted mode.

Temperature control is attractive, and even as simple as a light bulb or heating resistor, if it is properly thought out. It does not need to be exotic, but can be simple. It can be expensive, on the other hand, if one wants to get hairy with it.

> Probably the simplest way for someone trained in electronics to visualize
> thermal systems is by way of analogy. Think of temperature as being
> potential, and heat flow as being current. The isulation is resistance
> and the chassis and component mass is capacitance (there is no analogy to
> inductance with a thermal system). Heat generated in components acts as a
> current source and heat loss to the surroundings can be represented as a
> resistance connected to a voltage source representing the surrounding
> temperature. With this analogy, you can quickly see why you need a
> "voltage regulator" or "temperature controller" for the VFO components for

> optimum performance.

Interesting analogy.

Agreed, and it is too little thought about in most circles. That is why
I threw out the lamp system as a solution. It has worked very well for me
in the lab. It should work just as well in the glowbugging arena.
More exotic things can be done, but simple thermal mass and a heat source
works very well for me, for starters.

If we wanted to get more exotic, we could take a thermistor and use that
to control a small amplifier that would control the scr rather than a
simple dial as found on motor speed controllers. Hmmm, sounds like it
might work, but it would require sandbox technology.....(:+{{.....

> 73, Barry L. Ornitz WA4VZQ ornitz@eastman.com

Good discussion, Barry.....

73/ZUT DE NA4G/Bob UP

Date: Fri, 4 Oct 1996 11:52:19 -0400 (EDT)
From: rdkeys@csemail.cropsci.ncsu.edu
To: glowbugs@theporch.com, boatanchors@theporch.com
Cc: rdkeys@csemail.cropsci.ncsu.edu ()
Subject: BA/GB Weekend Frolicks
Message-ID: <9610041552.AA103511@csemail.cropsci.ncsu.edu>

Well, I would like to invite all Boatanchorite/Glowbuggite folks to remember
the extended BA/GB Friendly Firebottle Fist Function net funzies this weekend,
and to join in on the loads of fun/funny signals/classic fists/etc that are
aboard, if you have the time, on Friday and Saturday nights, as follows:

QTR 0100Z QRG 7050R500KHZ (this should be a good transcon time for West Coast
                            folks to try their luck on 40M).

QTR 0200Z QRG 3579R545KHZ (this is the usual BA 80M roundup).

QTR 0300Z QRG 1802R500KHZ (the ol' top band is getting into fine form!).

QTR 0400Z QRG 3579R545KHZ (fires ye up yer ancient Hartleys, peanut whistle
                            glowbugs, etc., here, cuz W1AW has gone to bed).

QTR 0500Z QRG 3579R545KHZ (a second round for transcon time for West Coast

folks to try their luck on 80M).

Call from on the hour to about 5 minutes after the hour, listening between calls as follows:

CQ BA CQ BA DE yourcall yourcall K

Don't depend upon me to start it rolling. If I am not there, someone else get the ball rolling.

If a group has started, break into the roundtable wit a single dit or a single dah or a single DE or a single DE yourcall K, to get others attention. We normally listen for a few seconds between operators to pick up additional stations as they happen aboard. Once a round has been completed, the lead operator will usually call for more folks to join at that time.

Normally on the 80M or 160M QRG there can easily be both a west coast and an east coast group going, without major interference to each other, especially if glowbugs are run.

Remember, this is not a formal net, but is a goodly fun roundtable.
If a great number of folks show up, someone may take a simple form of control to keep things rolling, slightly more formalized.
Usually, it is just a simple round table format.

So, the winter season is upon us, and the night will be cool this fine evening, the QRN will be down and the bands should be UP.

SEE U THERE

73/ZUT DE NA4G/Bob UP dit dit

Date: Fri, 04 Oct 1996 09:19:59 +0000
From: Richard Wilkerson <richqrp@pacbell.net>
To: glowbugs@theporch.com
Subject: crystals
Message-ID: <3254D6BF.58C4@pacbell.net>

I still have my old DX-40 and it still works great but what I need are some crystals, right now all I have is 7063kc.
Will the other crystals the smaller ones work in this rig or do I have to use the FT243 or what ever they were called HI HI?
Thanks rich WD6FDD

Date: Fri, 04 Oct 1996 12:41:45 -0400
From: Roy Morgan <morgan@speckle.ncsl.nist.gov>
To: glowbugs@theporch.com
Subject: Re: Temperature Control and Thermal Drifts
Message-ID: <9610041641.AA01265@speckle.ncsl.nist.gov>

At 10:14 AM 10/4/96 -0500, you wrote:
>
>Barry and I are in a slight state of academic disagreement on the
>heating the vfo topic.

 ....   I took an old hardboard
>asbestos oven from the 1930's, stripped the broken heating system out
>of it and installed a light bulb (25 watt if I remember correctly)

While I was at MIT, one Geotechnical Engineer pHd candidate was working on the sand from the bottom of the North Sea which had dumped a Texas Tower over into the sea and along with it 80 or so people. The soil measuring system had daily error fluctuations caused by room temperature variations. I built a simple thermistor sensor system which switched a relay and 40-watt light bulb. A bread-box sized house of half-inch styrofoam around the instrument kept the heat in and the whole thing worked like a charm.

Now, I might put a 7-1/2 watt lamp with dropping resistor (no thermostat) into my Valiant VFO compartment and see what happens!

-- Roy Morgan/Building 820, Room 562/Gaithersburg MD 20899
(National Institute of Standards and Technology, formerly NBS)
301-975-3254 Fax: 301-948-6213 morgan@speckle.ncsl.nist.gov --

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Date: Fri, 4 Oct 1996 09:59:51 -0700
From: mjsilva@ix.netcom.com (michael silva)
To: glowbugs@theporch.com
Subject: Re: Need basic info on transformers
Message-ID: <199610041659.JAA19620@dfw-ix9.ix.netcom.com>

>"Standard" color coding for primary, secondaries, taps, etc.

Older Handbooks have this in the construction practices chapter. I don't have one handy but if nobody else posts it I can do it tonight.

>determining the same for transformers without color coded wires.

I just "decoded" a couple of transformers last night. I start by determining all the connections by ohmmeter, including resistances. Then I attach the highest resistance connection to a variac and turn it up to 5 or so volts. Then I measure all the other "secondary" (one or more are probably the primary) voltages to get an idea of the ratios. >From this I make an educated guess at the likely primary (BTW, it may have a line voltage adjustment tap or two, but it won't be centertapped). Then I put 12 volts (10% of line voltage, just to make the numbers reasonable) into the presumed primary and look for recognizeable outputs such as .6 or 1.2 volts for filament windings, 20 - 80 volts for HV secondaries, etc. Usually it's pretty clear what you have at this point. You can make a further test by loading down the HV secondary with an appropriate load resistance and running the primary voltage up to full line voltage (all the while watching the primary current).

Regarding current ratings I just weigh the transformer and look up similar transformers in whatever catalog I have around. It's imprecise, but unless the transformer was designed for an exotic purpose (e.g. a few mA of HV but a lot of filament current) I think it's close enough.

73,
Mike, KK6GM

Date: Fri, 4 Oct 1996 14:19:50 -0400 (EDT)
From: rdkeys@csemail.cropsci.ncsu.edu
To: richqrp@pacbell.net
Cc: rdkeys@csemail.cropsci.ncsu.edu (), glowbugs@theporch.com
Subject: Re: crystals
Message-ID: <9610041819.AA103637@csemail.cropsci.ncsu.edu>

>
> I still have my old DX-40 and it still works great but what I need are
> some crystals, right now all I have is 7063kc.
> Will the other crystals the smaller ones work in this rig or do I have
> to use the FT243 or what ever they were called HI HI?
> Thanks rich WD6FDD

Usually smaller ones will work, but occasionally they will fracture due to heat stress under RF fire. It is better to use at least FT-243 sized blanks. The wire sizes or holder sizes don't really matter much. Pull a pair of pins from an octal tube to use as big FT-242 sized pins.

Gently solder to the existing wires.

A better method is to find an old twinlead plug for tv use. It is the same size as FT-243, and you can just screw the xtal wires down into the plug. Works fine.

And now......

Glowbuggites...... I have a very limited number left of rocks for the 40M BA/GB QRG kindly donated to us by Ray Mote. For those that are willing to put their rigs actually on the air and join in on the BA/GB QRG's I will make available what rocks are left plus a few of my own for the 80M QRG to those that will actually join us.

It will be first come, first served, you send me a 5x7 SASE brown envelope with 5 units of postage and I will pack you up one each 7050 rock and while my stocks remain, one each 3579 rock.

Most rocks seem to be pretty good, a few are a little weak, but should oscillate in many rigs. But, they are free, right?

If you are interested, send me an email first to:

   rdkeys@csemail.cropsci.ncsu.edu

subject line:

   BA/GB ROCKS

Include your snailmail address and your email address.

I will talley it up and see what I can disburse, to you at no cost.

73/ZUT DE NA4G/Bob UP

Date: Fri, 4 Oct 96 14:44:11 EDT
From: clarke@next3.acme.ist.ucf.edu (Thomas Clarke)
To: glowbugs@theporch.com
Subject: Re: Temperature Control and Thermal Drifts

Message-ID: <9610041844.AA00881@ next3.acme.ist.ucf.edu >

I recall looking at the schematic of a Meissner Signal Shifter and noticing that there was circuity that biased the tubes on even when the shifter was keyed off or switched to standby. I forget the details, but I think the 6L6Gx output tube always dissipated about 15 watts.

I convinced myself that they were trying to maintain constant dissipation - hence constant heat input - within the cabinet to minimize drift.

Tom Clarke, KE4VFH

End of GLOWBUGS Digest 312
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